

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A system for the production, storage and dispensation of hydrogen, said system comprising:

- (a) at least a pair of sealed and replaceable cylinders filled with water ~~having a lid,~~ mounted vertically on a platform,
- (b) a rotatable and replaceable containers with outlets to store encapsulated metal hydride shells with intervening gaps, said containers is fixed to the inner surfaces of the said cylinders, on both the sides, by supporting rings with rollers to provide a rotatable support,
- (c) a lids having a moist separation mesh serving as a passages for ~~the~~ hydrogen flow, fixed on top of ~~the~~ said cylinders, wherein said lids disposed as inlet means for encapsulated metal hydride shells and water before said cylinders is are sealed and mounted on the platform,
- (d) a slider base members disposed at the bottom end of ~~the~~ said cylinders, said slider base members is fixed to the inner surface of ~~the~~ said cylinders, on both the sides, by supporting rings,
- (e) said slider base members acts as a bottom to the containers, said slider base members having a passages, said passages in flow communication with a slider path to transmit the encapsulated metal hydride shells from ~~the~~ said containers into the cylinders,

- (f) a plurality of baffles disposed both inside and outside periphery of said ~~rotatable~~ containers, said inner baffles adapted to regulate and direct the flow of ~~the~~ said encapsulated metal hydride shells of ~~the~~ said containers on to ~~the~~ said slider path through said passages of the slider base members and said outer baffles adapted to rotate ~~the~~ said containers,
- (g) a pair of movable hydraulic ramming members with pistons ~~means~~ extending plane perpendicular to said ~~the~~ ~~pair of~~ containers disposed at the bottom end of the slider path, said ramming ~~means~~ members including ~~a~~ disintegrating sites to receive the encapsulated metal hydride shells from the slider passages and said ~~a~~ movable pistons disposed to disintegrate said encapsulated metal hydride shells and disperse metal hydride and broken shells into said cylinders for the disintegration and dispersion of broken shells and metal hydride into the cylinder, wherein said hydraulic ramming members connected to hydraulic cylinders and hydraulic power means,
- (h) ~~a~~ motion transmitting elements mounted on said ~~the~~ ramming members ~~means~~ and connected to said outer baffles to provide ~~a~~ corresponding rotatable action to ~~the~~ said containers; and
- (i) ~~an~~ outlets disposed on the lids of the cylinders to release the hydrogen thus produced in the cylinders, and
- (j) a control panel to control the operations of the system.
2. (Currently amended) The system as claimed in claim 1, wherein said cylinders consisting of ~~a~~ valves at the bottom end to control the flow of the water, disintegrated shells along with by-products.

3. (Currently amended) The system as claimed in claim 1, wherein the lids ~~of the said cylinders is an~~ are elevated and hollow with ~~lid disposed on top of the cylinder consisting of hydrogen outlet and~~ rupture diaphragms.
4. (Currently amended) The system as claimed in claim 1, wherein optionally a plurality of said cylinders and containers is connected in series for hydrogen production, storage and dispensation.
5. (Currently amended) The system as claimed in claim 1, wherein said cylinders and containers ~~is~~ are made of ~~material selected from~~ mild steel and stainless steel.
6. (canceled).
7. (Currently amended) The system as claimed in claim ~~7~~ 1, wherein the metal content for metal hydride is selected from Sodium, Boron, Lithium, Potassium and magnesium with aluminum or any metal hydride capable of releasing hydrogen.
8. (Currently amended) The system as claimed in claim ~~7~~ 1, wherein the shapes of encapsulated metal hydride shells ~~having shapes selected from~~ are spherical, cylindrical, rectangular and square, preferably spherical.
9. (Currently amended) The system as claimed in claim 1, wherein the encapsulation of

metal hydrides is ~~done using the~~ by a polymeric material selected from polystyrene, poly methyl methacrylate (PMMA), PVC with less plasticizer, HDPE, brittle poly olefins, preferably polystyrene and PMMA.

10. (Original) The system as claimed in claim 1, said hydraulic power means consisting of a hydraulic pack and the hydraulic cylinders with suitable sealing mechanism to prevent leakage during reciprocating motion of the piston while disintegrating the encapsulated metal hydride shells.

11. (canceled).

12. (Currently amended) The system as claimed in claim 1, wherein the control panel is controlled by ~~devices selected from~~ analogue and digital devices.

13. (Currently amended) The system as claimed in claim 1, wherein the ~~bottom~~ outlets of the containers consisting of an outlet valve, which is sealed and opened only during refilling, to prevent accidental spillage.

14. (Currently amended) The system as claimed in claim 1, wherein the inner baffles are used to provide an uninterrupted and selected flow of encapsulated metal hydride materials to the disintegration site.

15. (Currently amended) The system as claimed in claim 1, wherein the pistons of the

ramming members ~~means~~ crushes the metal hydride shells into small and tiny debris that are collected at the bottom of the container for easy disposal and recycling.

16. (Original) The system as claimed in claim 1, the accumulation of disintegrated pieces of encapsulated metal shells facilitates in creating a space in the container itself for storing and dispensing of hydrogen.

17. (canceled).

18. (Currently amended) The system as claimed in claim 1, wherein the intervening gaps among the encapsulated metal hydride shells in the containers are utilized as an additional storage means for the hydrogen gas.

19. (Currently amended) The system as claimed in claim 1, wherein the hydraulic power means connected ~~having a hydraulic seal is placed at the bottom of the system not only to prevent the leakage from the system but and also to have to~~ a multi-container dispensing system.

20. (Currently amended) ~~The claimed invention also provides a~~ A method for the production, storage and dispensation of hydrogen by using the system as claimed in claim 1, said method comprising the steps of;

- (a) mounting the sealed cylinders on the platform filled with a proportionate quantity of water and ~~a~~ the containers with encapsulated metal hydrides,

- (b) directing the encapsulated metal hydride shells into the disintegrating sites of the hydraulic ramming members with pistons ~~ramming means~~ by means of the inner baffles disposed in the containers and crushing the desired quantities of encapsulated metal hydride shells to disintegrate into small pieces;
- (c) dispersing the metal hydride and disintegrated pieces into the water;
- (d) reacting the metal hydride with water to produce hydrogen and byproducts;
- (e) releasing the hydrogen through the outlets of the lids ~~means provided at the top of the cone and of the~~ containers; and
- (f) collecting the disintegrated pieces and the byproducts at the bottom of the containers.

21. (Original) The method as claimed in claim 20, wherein the metal content for metal hydride is selected from Sodium, Boron, Lithium, Potassium and magnesium with an addition aluminum powder, or any metal hydride capable of releasing hydrogen, preferably sodium hydride.

22. (Currently amended) The method as claimed in claim 20, wherein the ~~plurality of~~ cylinders are connected in series ~~disposed~~ for simultaneous disintegration of enhanced number of encapsulated metal hydrides for the production of hydrogen gas.

23. (Currently amended) The method as claimed in claim ~~20~~ 21, wherein the aluminum powder that is used is powder form is in the range of 5-50% ~~to increase the density of the metal hydride and also to produce more hydrogen per unit volume by reacting with an~~

~~alkali, preferably sodium.~~

24. (Currently amended) The method as claimed in claim 20, wherein the byproducts are
~~consisting of~~ NaOH and alumina.

25. (canceled).

26. (Currently amended) The method as claimed in claim 20, wherein the reaction of metal
hydride takes place under ~~controller~~ controlled pressure and temperature.

27. (canceled).